

Claims

1. Use of a nucleic acid encoding a (poly)peptide with an intrinsic affinity to plasmodesmata, for the production of plants or parts thereof having an increased tolerance against drought and/or fungal infections and/or increased salt concentration and/or extreme temperature (heat, cold).
2. The use of claim 1, wherein, further, a plant is regenerated from the transfected plant cell.
3. The use of claim 2, wherein, following the regeneration, additionally further plants or plant cells are produced from the regenerated plant.
4. The use of any one of claims 1 to 3, wherein the (poly)peptide is a virus-encoded transport protein.
5. The use of claim 4, wherein the virus-encoded transport protein is the potato leaf roll virus-(PLRV) transport protein pr17 or a derivative thereof.
6. The use of claim 5, wherein the derivative is a pr17-protein with a hydrophilic N-terminal extension.
7. The use of claim 6, wherein the hydrophilic extension is the amino acid MAELSGSGSELHRGGGRSRTS.
8. The use of any one of claims 1 to 7, wherein the plant, the plant tissue or the plant cells are derived from the potato, from tobacco, from cereal or vegetables or are potatoes, tobacco plants, cereal plants or vegetable plants.
9. The use of any one of claims 1 to 3, wherein the increase in tolerance of plants against fungal infections is an increase in tolerance against infections with *Phytophthora infestans*.
10. Method for producing plants or parts thereof having an increased tolerance against drought and/or fungal infections and/or increased salt concentrations and/or extreme temperature (heat, cold), wherein

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(a) a plant, a plant tissue or a plant cell is transfected with a nucleic acid which encodes a (poly)peptide with an intrinsic affinity to plasmodesmata.

11. The method of claim 10, wherein further
(b) a plant is regenerated from the transfected plant cell.

12. The method of claim 11, wherein further,
following step (b)
(c) further plants or plant cells are produced from the plant gained in
(b).

13. The method of any one of claims 10 to 12, wherein the (poly)peptide is a virus-encoded transport protein.

14. The method of claim 13, wherein the virus-encoded transport protein is the potato leaf roll virus-(PLRV) transport protein p17 or a derivative thereof.

15. The method of claim 14, wherein the derivative is a pr17-protein with a hydrophilic N-terminal extension.

16. The method of claim 15, wherein the hydrophilic extension is the amino acid MAELSGSGSELHRGGGRSRTS:

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17. The method of any one of claims 10 to 16, wherein the plant, the plant tissue or the plant cells are derived from potato, from tobacco, from cereals or vegetables or are potatoes, tobacco plants, cereal plants or vegetable plants.

18. The method of any one of claims 10 to 17, wherein the increase in tolerance of plants against fungal infections is an increase in tolerance against infections with *Phytophthora infestans*.

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